CLAIMS:

1. A refrigeration system of the type having a main refrigeration circuit, wherein a first refrigerant goes through at least a compression stage having at least one compressor, wherein said first refrigerant is compressed to a high-pressure gas state to then reach a condensation stage, wherein said refrigerant in said high-pressure gas state is condensed at least partially to a high-pressure liquid state to then reach an expansion stage, wherein said first refrigerant in said high-pressure liquid state is expanded to a first low-pressure liquid state to then reach an evaporation stage, wherein said first refrigerant in said first low-pressure liquid state is evaporated at least partially to a first low-pressure gas state by absorbing heat, to then return to said compression stage, said refrigeration system comprising an energy-storage stage in parallel to the evaporation stage, the energy-storage stage having a container in which a medium is disposed such that said first refrigerant absorbs heat from said medium during a period of a day where the at least one compressor is less in demand, said medium being used thereafter as a heat absorber in an evaporation stage of an air-conditioning cycle.

2. The refrigeration system according to Claim 1, wherein the medium is in heat-exchange relationship with said first refrigerant.

3. The refrigeration system according to Claim 1, wherein the medium is in heat-exchange relationship with a second refrigerant, the second refrigerant being circulated in a closed loop in heat-exchange relationship with the first refrigerant.

4. The refrigeration system according to Claim 1, wherein the medium changes phases by heat exchange with said first refrigerant.

5. The refrigeration system according to Claim 4, wherein said phases are liquid and solid.

6. The refrigeration system according to Claim 1, wherein the energy-storage stage is operated at night to absorb heat from the medium, and is operated at day to have said medium absorb heat from ventilation air.

7. The refrigeration system according to Claim 1, wherein a volume of medium contained in the container has an energy-storing capacity above a summer day's air-conditioning load.

8. A combination of a refrigeration system and an energy-storage system therebetween, comprising:

a refrigeration system having a refrigeration circuit, wherein a first refrigerant goes through at least a compression stage having at least one compressor, wherein said first refrigerant is compressed to a high-pressure gas state to then reach a condensation stage, wherein said first refrigerant in said high-pressure gas state is condensed at least partially to a high-pressure liquid state to then reach an expansion stage, wherein said first refrigerant in said high-pressure liquid state is expanded to a first low-pressure liquid state to then reach an evaporation stage, wherein said first refrigerant in said first low-pressure liquid state is evaporated at least partially to a first low-pressure gas state by absorbing heat, to then return to said compression stage; and

an energy-storage stage having a container retaining a medium and heat exchange means in a ventilation system, the container being disposed such that said first refrigerant absorbs heat from said medium during a period of

a day where the at least one compressor is less in demand, said medium being directed to said heat-exchange means thereof to absorb heat from air in the ventilation system.

9. The combination according to Claim 8, wherein the medium is in heat-exchange relationship with said first refrigerant.

10. The combination according to Claim 8, further comprising a closed loop having a second refrigerant, the closed loop being in heat-exchange relationship with the first refrigerant such that the second refrigerant releases heat to the first refrigerant, and in heat-exchange relationship with the medium such that the second refrigerant absorbs heat from the medium, whereby the first refrigerant absorbs heat from said medium through said second refrigerant.

11. The combination according to Claim 8, wherein the medium is in said heat-exchange relation with said refrigerant at night, and absorbs heat in the ventilation system at day.

12. The combination according to Claim 8, wherein the medium changes phases by heat exchange with said refrigerant.

13. The combination according to Claim 12, wherein said phases are liquid and solid.

14. A method for storing energy from a refrigeration system having a first refrigerant undergoing compression, condensation, expansion and evaporation stages of a refrigeration cycle, comprising the steps of:

i) providing a container having a medium in a first state and heat exchange means for heat exchange with said medium;

ii) directing a portion of said first refrigerant from the expansion stage to absorb heat from said medium during a period of a day where the compression is less in demand, such that said medium in said container is in a second state wherein said medium is cooled with respect to the first state; and

iii) cooling air of a ventilation system by heat exchange with said medium in said second state such that said medium generally returns to said first state.

15. The method according to Claim 14, wherein in step ii) said first refrigerant is directed to the heat-exchange means to absorb heat from said medium.

16. The method according to Claim 14, wherein in step i) a closed loop is provided having a second refrigerant connected to said heat-exchange means and in heat-exchange relationship with said first refrigerant, such that said first refrigerant in step ii) absorbs heat from said second refrigerant which absorbs heat from the medium.

17. The method according to Claim 14, wherein step ii) is performed during a substantially greater portion of a time period of a day having a first electricity tariff, and step iii) is performed during a substantially greater portion of another time period of a day having a second electricity tariff, said second electricity tariff being higher than said first electricity tariff.

18. The method according to Claim 14, wherein step ii) is performed during a half portion of a day wherein the refrigeration system operates at a lower capacity in the refrigeration cycle, and step iii) is performed during a remaining half portion of the day wherein the refrigeration system operates at a higher capacity.

19. The method according to Claim 14, wherein step ii) is performed at night and step iii) is performed in daytime.

20. The method according to Claim 14, wherein step ii) is performed between 9:00 p.m. and 7:00 a.m. and step iii) is performed between 7:00 a.m. and 9:00 p.m.